AUTHOR INDEX

Anderson, J.W., Sant'Ambrogio, F.B., Mathew, O.P. and Sant'Ambrogio, G., Water-responsive laryngeal receptors in the dog are not specialized endings, 33

Arieli, R., Can the rat detect hypoxia in inspired air?, 243

Barrow, R.E., Chemical structure of phospholipids in the lungs and airways of sheep, 1

Bellemare, F., see D'Angelo, E., 177

Berssenbrugge, A.D., see Daristotle, L., 123

Biggs, D.F., see Martin, J.G., 111

Bisgard, G.E., see Daristotle, L., 123

Cain, J.B., Livingston, S.D., Nolan, R.W. and Keefe, A.A., Respiratory heat loss during work at various ambient temperatures, 145

Cameron, I.R., see Shee, C.D., 57

Caroff, J., see Fiévet, B., 81

Cassin, S., see Clarke, W.R., 19

Chang, H.K., see Naeije, R., 205

Clarke, W.R., Gause, G., Marshall, B.E. and Cassin, S., The role of lung perfusate P_{O_2} in the control of the pulmonary vascular resistance of exteriorized fetal lambs, 19

Cotton, D.J., see Prabhu, M.B., 195

D'Angelo, E. and Bellemare, F., Electrical and mechanical output of the inspiratory muscles in anesthetized dogs, 177

Daristotle, L., Berssenbrugge, A.D., Engwall, M.J. and Bisgard, G.E., The effects of carotid body hypocapnia on ventilation in goals, 123

Davis, R.W., see Willford, D.C., 137

diPrampero, P.E., see Samaja, M., 69

Droma, T.S., see Sun, S.F., 151

Engwall, M.J., see Daristotle, L., 123

Ernst, V., see Sillau, A.H., 279

Fiévet, B., Caroff, J. and Motais, R., Catecholamine release controlled by blood oxygen tension during deep hypoxia in trout: effect on red blood cell Na/H exchanger activity, 81

Freidel, J.F. and Javaheri, S., Bumetanide and cerebrospinal fluid acid-base variables during acute CO_2 elevation, 91

Fukushima, T., see Miyano, M., 9

Gause, G., see Clarke, W.R., 19

Graham, B.L., see Prabhu, M.B., 195

Gray, A.T., see Willford, D.C., 137

Groebe, K. and Thews, G., Role of geometry and anisotropic diffusion for modelling P_{O_2} profiles in working red muscle, 255

Hempleman, S.C., see Willford, D.C., 137

Hill, E.P., see Willford, D.C., 137

Huang, S.Y., see Sun, S.F., 151

Janczweski, W.A. and Karczewski, W.A., The role of neural connections crossed at the cervical level in determining rhythm and amplitude of respiration in cats and rabbits, 163

Javaheri, S., see Freidel, J.F., 91

Karczewski, W.A., see Janczweski, W.A., 163

Kato, H., see Takahashi, E., 45

Keefe, A.A., see Cain, J.B., 145

Kobayashi, H., Pelster, B. and Scheid, P., CO_2 back-diffusion in the rete aids O_2 secretion in the swimbladder of the eel, 231

Kobayashi, H., see Pelster, B., 219

Livingston, S.D., see Cain, J.B., 145

Maarek, J.-M., see Maeije, R., 205

Marshall, B.E., see Clarke, W.R., 19

Martin, J.G., Wang, A., Zacour, M. and Biggs, D.F., The effects of vasoactive intestinal polypeptide on cholinergic neurotransmission in an isolated innervated guinea pig tracheal preparation, 111

Mathew, O.P., see Anderson, J.W., 33

McCullough, R.E., see Sun, S.F., 151

McCullough, R.G., see Sun, S.F., 151
Menon, A.S., see Takahashi, E., 45
Mink, J.T., see Prabhu, M.B., 195
Miyano, M., Nakamura, M., Yamaya, M., Fukushima, T., Sekizawa, K., Sasaki, H. and Takishima, T., Series distribution of mucociliary clearance of magnetized iron particles in anesthetized dogs, 9
Moore, L.G., see Sun, S.F., 151
Motais, R., see Fiévet, B., 81
Motterlini, R., see Samaja, M., 69

Naeije, R., Maarek, J.-M. and Chang, H.K., Pulmonary vascular impedance in microembolic pulmonary hypertension: effects of synchronous high-frequency jet ventilation, 205
Nakamura, M., see Miyano, M., 9
Nolan, R.W., see Cain, J.B., 145

Pelster, B., Kobayashi, H. and Scheid, P., Buffering characteristics of eel blood at the extreme conditions in the swimbladder, 219
Pelster, B., see Kobayashi, H., 231
Phillipson, E.A., see Takahashi, E., 45
Prabhu, M.B., Mink, J.T., Graham, B.L. and Cotton, D.J., Effect of a deep breath on gas mixing and diffusion in the lung, 195

Reeves, C.S., see Sun, S.F., 151
Reeves, J.T., see Sun, J.F., 151
Reyes, N., see Sillau, A.H., 279
Roberts, A.M., see Yu, J., 101
Rovida, E., see Samaja, M., 69
Rubinacci, A., see Samaja, M., 69

Samaja, M., Rovida, E., Motterlini, R., Tarantola, M., Rubinacci, A. and diPrampero, P.E., Human red cell age, oxygen affinity and oxygen transport, 69
Sant'Ambrogio, F.B., see Anderson, J.W., 33
Sant'Ambrogio, G., see Anderson, J.W., 33
Sasaki, H., see Miyano, M., 9
Scheid, P., see Kobayashi, H., 231
Scheid, P., see Pelster, B., 219
Sekizawa, K., see Miyano, M., 9
Shee, C.D. and Cameron, I.R., The effect of pH and hypoxia on function and intracellular pH of the rat diaphragm, 57
Sillau, A.H., Ernst, V. and Reyes, N., Oxidative capacity distribution in the cardiac myocytes of hypermetabolix rats, 279
Slutsky, A.S., see Takahashi, E., 45
Sun, S.F., Droma, T.S., Zhang, J.G., Tao, J.X., Huang, S.Y., McCullough, R.G., McCullough, R.E., Reeves, C.S., Reeves, J.T. and Moore, L.G., Greater maximal O_2 uptakes and vital capacities in Tibetan than Han residents of Lhasa, 151

Takahashi, E., Menon, A.S., Kato, H., Slutsky, A.S. and Phillipson, E.A., Control of expiratory duration by arterial CO_2 oscillations in vagotomized dogs, 45
Takishima, T., see Miyano, M., 9
Tao, J.X., see Sun, S.F., 151
Tarantola, M., see Samaja, M., 69
Thews, G., see Groebe, K., 255

Wang, A., see Martin, J.G., 111
Willford, D.C., Gray, A.T., Hempleman, S.C., Davis, R.W. and Hill, E.P., Temperature and the oxygen-hemoglobin dissociation curve of the harbour seal, *Phoca vitulina*, 137

Yamaya, M., see Miyano, M., 9
Yu, J. and Roberts, A.M., Indirect effects of histamine on pulmonary receptors in cats, 101

Zacour, M., see Martin, J.G., 111
Zhang, J.G., see Sun, S.F., 151

SUBJECT INDEX

Acid–base balance, *see* pH
Acclimatization
  to altitude, 151
Acetylcholine
  and neurotransmission in airways, 111
Airways
  heat exchange, 145
  neurotransmission in –, 111
  occlusion of –, 177
  patency of –, 33
  phospholipids in –, 9
  upper – receptors, 33
Allosteric modifiers
  2,3-DPG, 69
Alveolar plateau
  slope of –, 195
Altitude, 151
Animals
  cat, 101, 163
  dog, 9, 33, 45, 91, 177, 205
  eel, 219, 231
  goat, 123
  guinea-pig, 111
  harbor seal, 137
  lamb, fetal, 19
  man, 69, 145, 151, 195
  rabbit, 163
  rat, 45, 243, 279
  sheep, 1
  trout, 81
Arterial P_{CO_2}
  respiratory oscillations, 45
Arterial pH
  oscillations, 45
Artificial ventilation
  high frequency jet –, 205

Blood
  CO_2 equilibrium, 231
  O_2 equilibrium, 137
O_2 transport properties, 69
Blood flow
  pulmonary –, 19, 205
Bohr effect
  in harbor seal, 137
Breath holding, 195
Breathing pattern, *see* Pattern of breathing
Buffer
  non-bicarbonate – in eel blood, 231

Carbon dioxide
  and CSF acid–base balance, 91
  transport in blood, 231
  ventilatory response to –, 45
Cardiac myocytes, 279
Cardiac output, 205
Cardiogenic oscillations, 195
Carotid body
  CO_2 sensitivity, 123
  isolated perfused –, 123
Catecholamine
  release in hypoxia, 81
Cerebrospinal fluid
  acid–base balance in –, 91
Clearance
  mucociliary –, 9
Compliance, 101.
Control of breathing
  cerebrospinal fluid, 91
  neural pathways, 163
  response pathways, 163
  response to CO_2, 45, 91, 123
Counter-current gas exchange, 219
Cytochrome oxydase, 279

Detection
  of hypoxia, 243
Diaphragm
  see also Muscle
  contractility, 57
  EMG, 177
Diffusing capacity of lung
  for CO, 195
  single breath –, 195
Diffusion
  facilitated –, 255

of CO_2 in swimbladder, 219, 231
of O_2 in tissue, 255
Drug
bumetanide, 91
phosphoramidon, 111

Electromyogram, 177
Emboli, pulmonary, 205
Exercise, muscular
and heat loss, 145
maximal – at altitude, 151

Fetus
lamb, 19
Fish
swimbladder, 219, 231

Gas bladder, 219, 231
Gas mixing, 195

Heart
see also cardiac
mitochondria, 279
Heat exchange
respiratory –, 145
Histamine
and lung receptors, 101
Humidity of expired gas, 145
Hypercapnia
and CSF acid–base balance, 91
and respiratory muscles, 177
Hyperoxia
pulmonary vascular resistance, 19
tissue, 219
Hypertension, pulmonary, 205
Hypocapnia
and carotid body, 123
Hypoxia
and maximal exercise, 151
and pulmonary vascular resistance, 19
and red cell Na/H antiport, 81
sensing –, 243

Inert gas
mixing in the lung, 195
washout from lung, 195
Ion transport
cerebrospinal fluid, 91
red cells, 81
Isoproterenol
on mucociliary clearance, 9

Larynx
receptors, 33
Lung
isolated perfused –, 19
receptors, *see* Receptors

Magnetic field
remanent –, 9
Methods, *see* Techniques
Mitochondria
density of – in heart muscle, 279
Model
of swimbladder gas exchange, 219
of tissue gas exchange, 255
Mucociliary clearance, 9
Muscle
respiratory, *see* Respiratory muscle
skeletal, 255
Muscular exercise, *see* Exercise, muscular
Muscle fatigue
and intracellular pH, 57
Myoglobin, 255

Neurotransmission
ganglionic – in airways, 11

Occlusion pressure, 177
Oscillations
of arterial P_{CO_2}, 45
Oxidative capacity, 279
Oxygen affinity
harbor seal, 137
man, dependence on age, 69
Oxygen-hemoglobin equilibrium in blood
in harbor seal, 137
in man, dependence on age, 69
Oxygen partial pressure
in tissue, 255
Oxygen uptake
in hypoxia, 151

P_{50}, *see* Oxygen affinity
pH
arterial
dog, 45
trout, 81
cerebrospinal fluid –, 91
electrode, 45
intracellular
rat diaphragm, 57
O_2-Hb equilibrium

harbor seal, 137
Pattern of breathing
CO_2 oscillations, 45
Perception
of hypoxia, 243
Phospholipids
in alveolar lavage, 1
Phrenic nerve
motoneurons, 163
Posture
and inspiratory muscle activity, 177
Pregnancy
and O_2 affinity, 69
Pressure
intrathoracic –, 205
occlusion –, *see* Occlusion pressure
pulmonary vascular –, 205
Pulmonary circulation, 19, 205
Pulmonary vascular pressure, 205

Receptors
carotid body –, 123
laryngeal –, 33
rapidly adapting pulmonary –, 101
Red cells
aging and O_2 transport, 69
Na/H antiport, 81
Regulation of respiration *see* Control of breathing
Resistance
pulmonary vascular –, 19, 205
Respiratory acidosis
and CSF acid–base balance, 91
Respiratory centers, 163
Respiratory muscle
diaphragm, 57, 177
electrical activity of –, 177
inspiratory, 177
Respiratory rhythm, 163
Respiratory pathways, 163
Rete mirabile
of fish swimbladder, 219, 231
Root effect, 231

Single breath
diffusing capacity, 195
washout, 195
Surfactant, 1
Swimbladder, 219, 231

Techniques in respiratory physiology
DMO, 57
for ventilation, *see* Artificial ventilation
remanent magnetic field, 9
thermodilution, 205
Temperature
effects on O_2-Hb equilibrium, 137.
of expired gas, 145
Tissue gas exchange, 255
Trachea
cholinergic neurotransmission in –, 111
clearance of particles from –, 9
phospholipids, –, 1

Vagus nerve
block or section of –, 45, 163, 177
stimulation, 111
Vasoactive intestinal polypeptide (VIP)
and neurotransmission, 111
Vasoconstriction
hypoxic –, 19
Ventilation
sensitivity to CO_2, 123
Vital capacity
and altitude acclimatization, 151